

WHAT IS CLAIMED IS:

1. A distributed printing system comprising: a print client for creating PDL data based on a print request of a user;

a printer controller for delivering raster data, which is created by subjecting the PDL data created by said print client to raster image processing, to a printer engine so as to be printed thereby; and

RIP distribution control means capable of making the raster image processing distributed among and performed by said print client and said printer controller.

2. The distributed printing system as set forth in claim 1, characterized in that said RIP distribution control means distributes the raster image processing based on an amount of accumulation of the PDL data waiting for the raster image processing.

3. The distributed printing system as set forth in claim 2, characterized in that said RIP distribution control means determines the amount of accumulation of said PDL data based on PDL feature data corresponding to an amount of raster image processing of said PDL data.

4. The distributed printing system as set forth in claim 1, characterized in that said RIP distribution control means distributes the raster image processing based on RIP host data which is data related to the processing performance of said print client.

5. The distributed printing system as set forth in claim 4, characterized in that said processing performance includes at least one of a raster image processing speed, a memory capacity, and a data transmission time.

6. The distributed printing system as set forth in claim 1, characterized in that said RIP distribution control means comprises RIP function parts

arranged in said printer controller and said print client, respectively; and RIP host selection control means arranged in said printer controller for determining, upon receipt of a notification of transmission of PDL data from said print client, whether an amount of accumulation of PDL data waiting for raster image processing when the PDL data to be transmitted from said print client is received becomes equal to or greater than a prescribed threshold, and for issuing an instruction such that said print client performs raster image processing of said PDL data by using its own RIP function part when the amount of accumulation of PDL data waiting for raster image processing becomes equal to or greater than said threshold.

7. The distributed printing system as set forth in claim 6, characterized in that a plurality of print client members are arranged as said print client; and said RIP host selection control means comprises: an RIP host data part arranged in said printer controller for storing RIP host data which is data related to the processing performance of each print client member; and an RIP host selection function part for selecting one of said plurality of print client members which has the highest processing performance while referring to the RIP host data when the amount of accumulation of said PDL data waiting for raster image processing becomes equal to or greater than a prescribed threshold, and for instructing the print client member thus selected in such a manner that raster image processing of said PDL data is carried out by said selected print client member while using its own RIP function part.

8. The distributed printing system as set forth in claim 6, characterized in that RIP execution permission means is provided in said RIP function part arranged in each print client member in such a manner that the user can preset whether an instruction of raster image processing from said printer controller is acceptable.

9. The printing system as set forth in claim 8, characterized in that a plurality of print client members are arranged as said print client; and said

RIP host selection control means comprises: an RIP host data part arranged in said printer controller for storing RIP host data which is data related to the processing performance of each print client member; and an RIP host selection function part for selecting those of said plurality of print client members which said RIP execution permission means permits acceptance of an raster image processing instruction from said printer controller when the amount of accumulation of said PDL data waiting for raster image processing becomes equal to or greater than a prescribed threshold, further selecting one of the thus selected print client members which has the highest processing performance while referring to the RIP host data, and instructing the print client member thus selected in such a manner that raster image processing of said PDL data is carried out by said selected print client member while using its own RIP function part.

10. *The printing system as set forth in claim 1, characterized in that said RIP distribution control means comprises: RIP function parts arranged in said printer controller and said print client, respectively; a PDL analysis function part arranged in said print client for extracting PDL feature data corresponding to an amount of raster image processing of the PDL data; and RIP host selection control means arranged in said printer controller for determining, upon receipt of a notification of transmission of PDL data from said print client, based on the PDL feature data from said PDL analysis function part whether the amount of accumulation of PDL data waiting for raster image processing when the PDL data to be transmitted from said print client is received becomes equal to or greater than a prescribed threshold, and for issuing an instruction such that said print client performs raster image processing of said PDL data by using its own RIP function part when the amount of accumulation of PDL data waiting for raster image processing becomes equal to or greater than said threshold.*

11. *The printing system as set forth in claim 10, characterized in that the*

PDL feature data extracted by said PDL analysis function part comprises the number of pages of the PDL data.

12. The distributed printing system as set forth in claim 10, characterized in that a plurality of print client members are arranged as said print client; and said RIP host selection control means comprises: an RIP host data part arranged in said printer controller for storing RIP host data which is data related to the processing performance of each print client member; and an RIP host selection function part for selecting one of said plurality of print client members which has the highest processing performance while referring to the RIP host data when the amount of accumulation of said PDL data waiting for raster image processing becomes equal to or greater than a prescribed threshold, and for instructing the print client member thus selected in such a manner that raster image processing of said PDL data is carried out by said selected print client member while using its own RIP function part.

13. The distributed printing system as set forth in claim 1, characterized in that said RIP distribution control means comprises: RIP function parts arranged in said printer controller and said print client, respectively; a PDL analysis function part arranged in said printer controller for extracting PDL feature data corresponding to an amount of raster image processing of the PDL data; and RIP host selection control means for determining, upon receipt of a notification of transmission of PDL data from said print client, based on the PDL feature data from said PDL analysis function part whether an amount of accumulation of PDL data waiting for raster image processing when the PDL data to be transmitted from said print client is received becomes equal to or greater than a prescribed threshold, and for issuing an instruction such that said print client performs raster image processing of said PDL data by using its own RIP function part when the amount of accumulation of PDL data waiting for raster image processing becomes equal to or greater than said threshold.

14. The distributed printing system as set forth in claim 13, characterized in that a plurality of print client members are arranged as said print client; and said RIP host selection control means comprises: an RIP host data part arranged in said printer controller for storing RIP host data which is data related to the processing performance of each print client member; and an RIP host selection function part for selecting one of said plurality of print client members which has the highest processing performance while referring to the RIP host data when the amount of accumulation of said PDL data waiting for raster image processing becomes equal to or greater than a prescribed threshold, and for instructing the print client member thus selected in such a manner that raster image processing of said PDL data is carried out by said selected print client member while using its own RIP function part.

15. The distributed printing system as set forth in claim 1, characterized in that said RIP distribution control means comprises: a PDL analysis function part arranged in said print client for extracting PDL feature data corresponding to an amount of raster image processing of the PDL data, and a notification function part having a function of downloading control data from said printer controller; and RIP host selection control means arranged in said printer controller for determining, upon receipt of a notification of transmission of PDL data from an RIP module storing a control program for raster image processing and from said print client, based on the PDL feature data extracted by said PDL analysis function part whether an amount of accumulation of PDL data waiting for raster image processing when the PDL data to be transmitted is received becomes equal to or greater than a prescribed threshold, and for sending control data of said RIP module to said print client when the amount of accumulation of PDL data waiting for raster image processing becomes equal to or greater than said threshold, and issuing an instruction such that said print client performs raster image processing of said PDL data by using the control data received by said print

client.

16. The distributed printing system as set forth in claim 15, characterized in that a plurality of print client members are arranged as said print client; and said printer controller selects one of said plurality of print client members which has the highest processing performance while referring to the RIP host data when the amount of accumulation of said PDL data waiting for raster image processing becomes equal to or greater than a prescribed threshold, and makes said notification function part of the print client member thus selected download a control program for raster image processing sent from said RIP module.

17. The distributed printing system as set forth in claim 7, characterized in that a host data collection part for collecting RIP host data of each print client member and transmitting the RIP host data thus collected to the RIP host data part at appropriate times is arranged in each print client member.

18. A distributed printing method comprising:

a PDL data creation step for creating PDL data in a print client based on a print request of a user;

a distribution step for distributing said PDL data to said print client and a printer controller;

a raster image processing step for acquiring raster data by performing raster image processing of the distributed PDL data in said print client or said printer controller; and

a printing step for delivering the raster data acquired through the raster image processing to a printer engine to print the raster data.

19. The distributed printing method as set forth in claim 18, characterized in that in said distribution step, the raster image processing is distributed based on an amount of accumulation of the PDL data waiting for raster image processing.

20. The distributed printing method as set forth in claim 19, characterized

in that the amount of accumulation of said PDL data is determined based on PDL feature data corresponding to an amount of raster image processing of the PDL data.

21. The distributed printing method as set forth in claim 18, characterized in that in said distribution step, the raster image processing is distributed based on RIP host data which is data related to the processing performance of said print client.

22. The distributed printing method as set forth in claim 21, characterized in that said processing performance includes at least one of a raster image processing speed, a memory capacity, and a data transmission time.

23. The distributed printing method as set forth in claim 18, characterized in that said distribution step comprises: a determination step for determining, upon receipt of a notification of transmission of PDL data from said print client, in said print controller whether an amount of accumulation of the PDL data waiting for raster image processing when the PDL data to be transmitted is received becomes equal to or greater than a prescribed threshold; and an RIP host selection step for issuing an instruction such that said print client performs raster image processing of said PDL data by using its own RIP function part when the amount of accumulation of the PDL data becomes equal to or greater than said threshold.

24. The distributed printing method as set forth in claim 23, characterized in that in said RIP host selection step, one of a plurality of print client members which has the highest processing performance is selected, and an instruction is issued to the print client member thus selected in such a manner that raster image processing of said PDL data is carried out by said selected print client member while using its own RIP function part.

25. The distributed printing method as set forth in claim 23, characterized in that an RIP execution permission step is provided in each print client member in such a manner that the user can preset whether a raster image

processing instruction from said printer controller is acceptable.

26. The distributed printing method as set forth in claim 25, characterized in that said RIP host selection step comprises: a step for selecting those of said plurality of print client members which are permitted to accept an raster image processing instruction from said printer controller in the RIP execution permission step; a step for referring to RIP host data for the print client members thus selected; and a step for further selecting one of the selected print client members which has the highest processing performance; wherein an instruction is given to the selected print client member such that the PDL data is subjected to raster image processing by using its own RIP function part.

27. The distributed printing method as set forth in claim 18, characterized in that said distribution step comprises: a step for extracting PDL feature data corresponding to an amount of raster image processing of the PDL data; a determination step for determining, upon receipt of a notification of transmission of PDL data from said print client to said print controller, based on the PDL feature data whether an amount of accumulation of the PDL data waiting for raster image processing when the PDL data to be transmitted is received becomes equal to or greater than a prescribed threshold; and an RIP host selection step for issuing an instruction such that said print client performs raster image processing of the PDL data by using its own RIP function part when the amount of accumulation of the PDL data becomes equal to or greater than said threshold.

28. The distributed printing method as set forth in claim 27, characterized in that said step for extracting PDL feature data is performed on a print client side.

29. The distributed printing method as set forth in claim 27, characterized in that said step for extracting PDL feature data is performed on a printer controller side.

30. The distributed printing method as set forth in claim 27, characterized in that said PDL feature data comprises the number of pages of the PDL data.

31. The distributed printing method as set forth in claim 27, characterized in that in said RIP host selection step, when there are a plurality of print client members, one of the plurality of print client members having the highest processing performance is selected, and an instruction is given to the selected print client member so that said PDL data is subjected to raster image processing by using its own RIP function part.

32. The distributed printing method as set forth in claim 23, characterized in that said RIP host selection step includes a step for transmitting control data of an RIP module from said printer controller to said print client when it is determined that the amount of accumulation of the PDL data becomes equal to or greater than said threshold, and for issuing an instruction such that said print client performs raster image processing of the PDL data by using the control data received.

33. The distributed printing method as set forth in claim 32, characterized in that when said print client comprises a plurality of print client members, one of said print client members which has the highest processing performance is selected by referring to RIP host data.

34. The distributed printing method as set forth in claim 23, characterized by comprising a host data collection step for collecting RIP host data of each of print client members and transmitting the RIP host data thus collected to said printer controller at appropriate times.